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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,049	07/18/2001	Suresh Katukam	CISCP694	8487

26541 7590 09/17/2004

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EXAMINER	
CHEA, PHILIP J	

ART UNIT	PAPER NUMBER
2153	

DATE MAILED: 09/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/909,049	KATUKAM ET AL.
	Examiner	Art Unit
	Philip J Chea	2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-34* is/are rejected.

7)☒ Claim(s) *34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 July 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 1/30/02
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-34 have been examined.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 1/30/2002 was filed after the mailing date of 11/16/2001. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

2. Figures 1a-2b should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because:

- Note line 1, language should not repeat information given in the title and avoid using phrases such as "disclosed".

Correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informalities:

- Note page 6 line 15, "of" is apparently "or".
- Note page 8 line 22, "as not be" is apparently "as not being" or "as not to be".
- Note page 16 line 1, "past" is apparently "path".

Appropriate correction is required.

Claim Objections

6. Claim 34 objected to because of the following informalities:

- Note the phrase "computer program product" is used in line 1, whereas claim 31 on which it depends recites the phrase "a method" in line 1.
- Note line 1, "claim 31" is apparently "claim 33".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-3, 5, 7-14, 17, 19, 21-24, 28-30, and 33 rejected under 35 U.S.C. 102(e) as being anticipated by Azuma et al. (U.S. 6,430,150).

As per claims 1, 12, 19, 24, 28, and 33, Azuma et al. disclose a system for computing paths between a first node and a second node within a network (see column 9, lines 21-23, where optical network is implied), as claimed, comprising:

- a route generator being arranged to generate a primary circuit path between the first node and the second node, the primary path including a first element selected from the plurality of elements (see column 4, lines 12-37, where first element is considered node 3, between nodes 1 and 2, also it is implied that a primary path exists if the nodes keep physical and logical topology information indicating paths formed between the nodes); and
- a list mechanism being arranged to identify the first element, wherein the route generator is further arranged to generate an alternate circuit path between the first node and the second node [Figure 5a] using the list mechanism, wherein the alternate circuit path does not include the first element identified by the list mechanism (see columns 7 and 8, lines 65-67 and 1-17, where it is implied that a storing means exists to remember the location and type of failure to avoid when creating the alternate route).

As per claims 2, 13, and 29, Azuma et al. disclose a system, as claimed, wherein the first element is a link (see column 7, lines 33-34, where the link failure indicates a first element that is not supposed to be included in the alternate route).

As per claims 3, 14, and 30, Azuma et al. disclose a system, as claimed, wherein the first element is a node (see column 7, lines 35-38, where node failures indicate a first element that is not supposed to be included in the alternate route).

As per claim 5, Azuma et al. disclose a system, as claimed, wherein the route generator is arranged to generate the primary circuit path that includes the first element and a set of elements (see column 7, lines 35-38, where node failures imply that more than one node can be avoided when creating an alternate path, also since each node adjacent nodes can indicate a failed node, it is implied that if more than one node fails, the adjacent nodes can report it), and the list mechanism is arranged to identify the first element and the set of elements as being

inaccessible for use in generating the alternate circuit path (see columns 7 and 8, lines 65-67 and 1-17, where it is implied that a storing means exists to remember the location and type of failure to avoid when creating the alternate route).

As per claim 7, Azuma et al. disclose a system, as claimed, wherein the route generator is arranged to accept an input to specify a nodal diverse constraint or a link diverse constraint for the alternate circuit path (see column 8, lines 2-3 and 13-17, where a node or link failure being determined is considered the constraint).

As per claim 8, Azuma et al. disclose a system, as claimed, wherein when the input specifies the nodal diverse constraint, the first element is a node [Figure 5b, where node 3 is not included in alternate route].

As per claim 9, Azuma et al. disclose a system, as claimed, wherein when the input specifies the link diverse constraint, the first element is a link [Figure 5a, where link 6-5 is not included in alternate route].

As per claim 10, Azuma et al. disclose a system, as claimed, wherein the device is associated with the first node (see column 7, lines 51-60, where the processing of link failure and alternate route is provided by the node in Figure 6).

As per claim 11, Azuma et al. disclose a system, as claimed, wherein the route generator is further arranged to implement the primary circuit [Figure 6 (24,22), where it is implied that a primary path existed before the alternate path] and the alternate circuit path [Figure 7 (14,16), where implementation occurs from computation and cross connecting].

As per claim 17, Azuma et al. discloses a system, as claimed, further including means for creating a list including an identifier which identifies the first element as being inaccessible for use as a part of the alternate path (see columns 7 and 8, lines 65-67 and 1-17, where it is implied that a storing means exists to remember the location and type of failure to avoid when creating the alternate route).

As per claim 21, Azuma et al. discloses a system, as claimed, wherein the element described in claim 19 is a source node (see column 7, lines 46-60, where transporting data implies the node being a source to another object on the network).

As per claim 22, Azuma et al. disclose a system, as claimed, wherein route generator identifies a first link to place in the list (see columns 7 and 8, lines 65-67 and 1-12, where failure types can be links or nodes and the implied list is used to remember the location and type of failure).

As per claim 23, although not expressly disclosed by Azuma et al., it is implied that a plurality of links can be placed in the list used for finding the alternate path because individual nodes send alarms to indicate if there is a link failure (see Figure 6). Therefore, if more than one link fails, route generator will know about it and prepare an alternate path using the existing links and nodes.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 4, 6, 16, 18, 20, 25-27, 32, and 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Azuma et al. as applied to claims 1, 5, 12, 17, 19, 23, 24, 28, and 33 above, and further in view of Fahim et al. (U.S. 5,459,716).

As per claims 4, 16, 18, 20, 25, 32, and 34 although the system disclosed by Azuma et al. shows substantial features of the claimed invention (discussed above), it fails to disclose a protected link, and means for identifying the protected link as being inaccessible to the alternate path.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Azuma et al., as evidenced by Fahim et al.

In an analogous art, Fahim et al. discloses a system having a plurality of nodes connected by protected links (spare edges = protected links), where alternate routes are found

[Figure 7 (204-212)], and not used in the alternate path (see column 11, lines 5-45, where action edges, which do not include protected links, are used for alternate path routing).

Given the teaching of Fahim et al., a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Azuma et al. by employing alternate path routing which avoids protected links, such as disclosed by Fahim et al., in order to determine the most cost effective alternate route to implement according to the commodity cost factors (see column 10, lines 20-38).

As per claim 26, Azuma et al. further disclose an element applied to claim 23 above as a source node (see column 7, lines 46-60, where transporting data implies the node being a source to another object on the network).

As per claim 27, Azuma et al. further disclose an element applied to claim 23 above to place the first identifier that identifies the first node in the list (see columns 7 and 8, lines 65-67 and 1-12, where failure types can be links or nodes and the implied list is used to remember the location and type of failure).

11. Claims 15 and 31 rejected under 35 U.S.C. 103(a) as being unpatentable over Azuma et al. as applied to claims 12 and 30 above, and further in view of Swallow (U.S. 6,751,190).

Although the system disclosed by Azuma et al. shows substantial features of the claimed invention (discussed above), it fails to disclose a means for identifying a tunnel in the primary circuit path and means for identifying the first element as being included in the tunnel..

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Azuma et al., as evidenced by Swallow.

In an analogous art, Swallow discloses a communications tunnel comprising a plurality of elements [Figure 1] where a first element included in the tunnel is identified as not being accessible by the alternate route (see column 3, lines 9-40, where the bypass tunnel (128) is used that does not include the first element (106)).

Given the teaching of Swallow, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Azuma et al. by employing a

tunnel bypassing system, such as disclosed by Swallow, in order to give support for realtime data transfer which might implement in-order delivery of packets using a tunnel (see Swallow column 1, lines 47-67).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Croslin, William D.	US 5883881 A
Croslin, William D.	US 5838660 A
Croslin, William D. et al.	US 5832196 A
Iwata, Atsushi	US 6026077 A

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip J Chea whose telephone number is 703-605-1202. The examiner can normally be reached on M-F 7:45-4:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on 703-305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Philip J Chea
Examiner
Art Unit 2153

FRANTZ B. JEAN
PRIMARY EXAMINER